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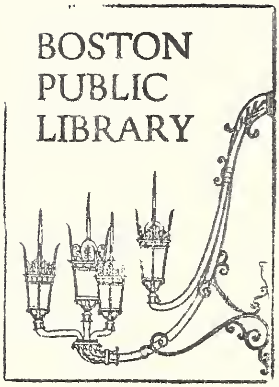

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OPEN SPACE IN THE METROPOLITAN AREA

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OPEN SPACE IN THE METROPOLITAN AREA

1. Why Open Space

a. Its function as a land use p. 1
b. Its function for people directly 2
c. Changes in its function through time 3

2. Where Open Space (Past, present, and proposed)

a. Its relation to physical features: site, climate 8
b. Its relation to other land uses 10
c. The forms of open space 12

3. How much Open Space

a. Existing amount and distribution 15
b. Amount needed in the future 19

4. The Plan for Open Space

a. Guiding assumptions and principles 24
b. The role of open space in Boston 25
c. The general plan 26
e. Agencies concerned with open space in the Boston area, their specific proposals, and their potential role in preserving open space 27
f. Conclusion 32

Agencies Contacted and Bibliography 33

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Boston City Planning Board ?

Mt Metro Area Planning Council ?

June 30, 1967

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OPEN SPACE

1. Why Open Space?

In the general, metropolitan sense in which open space will be discussed, it includes large parks, reservations, golf clubs, cemeteries, outdoor athletic facilities, institutions set in large grounds, lakes and rivers, in short anything which has an open character and serves the functions of open space.

What these functions are has varied through time as family life, habits of work, income, patterns of land use, and methods of transportation have changed. The purpose of all use of land is to serve the activities of people. The direct use of open space by people is only one aspect of its function, however; the other aspect has to do with its function as a land use.

a. Its function as a land use

Today, and for the time span of this Plan, open space can perform the following functions as a land use:

1) structure the environment by providing a break in the development pattern and separating communities or districts. (Coherence)

2) contribute to the efficient operation of other land uses. Example: Most types of open space generate little traffic; large open spaces along a highway make it possible for the road to carry the heavy traffic generated by industries and institutions elsewhere along the road (Efficiency).

3) serve as a buffer between conflicting activities, e.g. airports and residences; railroads and institutions. (Health and safety).

4) maintain an ecological balance in the physical environment, i.e., improve local climate, preserve the water table, prevent air pollution. (Health and safety).

5) provide a link with the past. Open space can be the continuous element around which buildings, roads, etc. change. For example, the Common and the graveyards downtown have remained while buildings around them have been replaced. Indeed, on the local scale if the open spaces - the trees and the other amenities - exist, then rehabilitation of an area becomes quite feasible, e.g. Georgetown, D.C. In the long run the desirability of the whole metropolitan area as well as of local neighborhoods depends upon its open spaces around which the developed areas change. (Continuity).

6) bring out the identity of an area by exposing distinctive physical features - topography, vegetation, views. (Identity)

7) reserve land for future development (Adaptability).

b. Its function for people directly

For people's direct use open space has these main functions:

1) provide room for active outdoor recreation (Health, Stimulus) and for uninterrupted movement through space, such as biking, hiking, riding. (Continuity)

2) save beautiful sites for public use and access.

3) provide natural, unstructured setting in which a person can be in touch with nature, shape the environment himself as in camping, or at least let his eyes and imagination roam without running into objects made by other people. The absence of man-made objects allows people to relax and to restore their body and spirits. For a similar reason cultural facilities are often set in park-like surroundings; when you leave the museum or concert hall you have a chance to absorb your impressions before being confronted with new distracting stimuli.

4) help people to order their environment. People orient themselves in a city by edges between open and built up areas; by landmarks or lookout places such as hilltops; and by distinct districts: - open space can be the break between them. For example, South Boston and Central Boston are separated by the Fort Point Channel.

c. Changes in its function through time

People's use of open space has changed significantly in the last fifty years primarily because of increased leisure, income, and mobility.

The work week of non-agricultural workers has been shortened from an average of 66 hours in 1850 (eleven-hour day, six-day week) to 40 hours in 1956 (eight-hour day, five-day week). Initially cutting the hours of work, especially for women and children, was done for health reasons; later, the sharp rise in productivity made possible more leisure as well as real income gains. There are also more part-time workers. The per cent of non-agricultural workers employed part-time (1 to 14 hours per week) increased from 3.2% in 1940 to 4.5% in 1956. The number of hours paid for but not worked has increased, from ½ hour per week in 1929 to 3 hours in 1956.[1]

The composition of the labor force is also shifting. White collar workers constituted 10% of the labor force in 1910; by 1950 they accounted for 21% of the labor force. A study of the leisure hours of 5,000 people indicated that while they spent their free time largely in sedentary activities - reading,visiting, movies, they wanted to carry on much more active recreation - boating, tennis, camping.[2] The desire for active, productive recreation is probably closely related to the fact that work is becoming more clerical and sedentary.

Income has risen sharply in the last fifty years, but the share spent on recreation, reading, and education has increased even more sharply, from

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1. Larrabbee, Eric. Mass Leisure. "The Work Week in American Industry 1950-1956."
2. Ibid., p.163

2.7% of total expenditures in 1901 to 5.8% in 1950.[3] Sporting equipment and travel expenditures account for the major increase. The lowest income groups spend almost as large a share of their income on leisure activities as the highest income group. The per cent of income after taxes spent on leisure (excluding alcohol, TV, and dining out) varied as follows:[4]

Income	Per Cent
0 - $1,000	9.0
1,000 - 2,000	7.7
2,000 - 3,000	6.6
3,000 - 4,000	6.5
4,000 - 5,000	7.1
5,000 - 7,500	8.0
7,500 - 10,000	8.9
10,000 - and over	9.6

In the nation in 1955, $13,020,000 was spent on recreation and reading; the average family spent $228 in 1950, compared to $17 in 1901.[5] It is worth noting that the largest gains in leisure time have been by the middle-income groups which do not spend as large a share of their income on leisure activities as do high income groups.

Forecasts made for the Chicago area, project a continued increase in the share of income spent on recreation from 6.1% in 1950 (out of an average income of $4,411 per spending unit) to 7.3% in 1980 (out of $7,228).

The increase in mobility is indicated in the tremendous gain in car ownership. In 1919 there were roughly 5.5 cars for every 100 families in the large cities of the North. In 1950, there were 54.8; and by 1985, there are expected to be 78.4 cars per 100 families.[7] (68% of the families will own cars, and 10% will own two.)

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3. How American Buying Habits Change, US Dept. of Labor.
4. Larrabbee, Ibid. "30 Billion for Fun," p. 169
5. How American Buying...p. 214..Table does not indicate"constant dollars," so it is probably not.
6. Chicago Area Transportation Study, Consumer Expenditures Forecasts,p.22
7. Ibid.

In the Boston area, car registration is expected to be as follows:

Car Registration	City	Cars/ Persons	Standard Metro.Ar.	Cars/ Persons
1940	98,800	1/8	419,200	1/5
1950	132,800	1/6	576,000	1/4
1957	155,200	1/5	758,400	1/3
1980	212,500	1/4	1,272,500	1/2

The car is used heavily for social and recreational purposes: 35%-50% of all trips by car are for this purpose. Conversely, the most common mode of transportation when the purpose of the trip is recreation is the automobile. Partly, this is due to the fact that most recreation trips involve more than one person, and traveling jointly is easier and more pleasant by car than by transit.

What do these changes in work patterns, income and mobility mean for the purpose of open space?

It should be noted that the same open space may serve both the "land use functions" described above and people directly. Therefore, although the social changes described apply only to people's use of open space, they affect the location and development of all types of open space.

First, it is likely that the traditional division of work and leisure will become blurred in the future. These two aspects of life will fuse, work becoming more like leisure and leisure taking on some qualities of work. (..."The sharp division between work and leisure time will become less distinct; recreation will be more creative and productive, and vocations will become more pleasant and enjoyable."[8]) Evidence of this fusion can be seen already. For recreation, people like to camp, which is certainly a lot of work, or garden, or carry out "do it yourself" projects, or take a course in carpentry. In the working world, businesses are moving to

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8. Perry Norton, Urban Problems and Techniques, p. 51

lakeside locations where workers can enjoy the "country-club" atmosphere; conventions and other semi-recreation activities are flourishing.

In 1870 the purpose of the park was "to give the city dweller recreative escape from the stresses of city life, to make amends for the confinement, darkness, noise, and close air of the streets, factory, and even the home"[9] ....strolling through a naturalistic setting on a Sunday afternoon rested the body for the vigorous work of the week. Today, with the improvement in the home and work environment, escape from crowded and noisy conditions is no longer the main function of open space. Today when many jobs are sedentary and involve abstract paper work rather than physical work, there is a great need to recreate actively, to mold and shape the physical environment, and to produce tangible results in leisure activity. This means that natural open areas in which families and groups as well as individuals can do things - camp, skate, study nature, are of special importance.

Creating and maintaining open space for the land use functions mentioned above has also taken on special importance with a shorter work week, rising incomes, and greater mobility. Some of the time cut off the work day is now spent in commuting, enabling people to live further from their work. Rising incomes mean that people can afford more house and land; industries and institutions also are developing at lower densities. Increased car ownership has made it possible to develop land in scattered locations, away from the rail and trolley lines around which development formerly clustered. The result of these changes, along with population growth, is a pattern of development which can spread anywhere and everywhere in the metropolitan area unless open spaces are set aside and maintained as such. Thus the

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9. Shurtleff, p.6

function of open space, (which may be cemeteries, airports, reservations, etc.,) as a break in the development pattern assumes special importance since technology and economic factors have made ubiquitous setlement possible.

2. Where Open Space (Past, present, and proposed)

a. Its relation to physical features: site, climate, etc.

The physical characteristics of the environment - the topography, soil and water, climate - are very important for the location and the use of open areas.

The US Weather Bureau summarized Boston's climate this way:[10] "The city's latitude (42°N) places it in the zone of prevailing west to east atmospheric flow...resulting in variety and changeability of the weather elements." The coast location of the city makes temperatures less extreme than they are inland. In winter they average around 30°, in summer around 70°. The first killing frost occurs usually at the end of October, while the last one is in mid-April. "Boston has no dry season." Normal rainfall varies between 2.7 and 3.5 inches per month, and snowfall of four inches or more occurs for about three days between November and March. The sun shines on the average of 58% of the 4459 hours in the year that it could shine. "The prevailing wind direction is from the southwest most of the time, but northwesterly in winter and early spring months...In summary, Boston's intermediate climate, with its seasonal (and other) variations, is most favorable for persons in fair health. It is stimulating to the mental and physical processes without demanding too much of bodily capacities for adjustment."

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[10] US Department of Commerce, Weather Bureau, Local Climatological Data, 1958, Boston, Mass.

For open space, this climate means that both winter and summer sports must be accommodated. At all times of year the weather is conducive to active outdoor recreation.

The City of Boston is situated along an irregular shoreline; its harbor is strewn with half-submerged drumlins that form the islands. Three rivers, the Mystic, Charles, and Neponset, empty water into the harbor from the relatively level Boston basin. A horseshoe shaped range of hills rises abruptly in the North, in Melrose, Malden and Winchester, to the West in Arlington, Belmont, and Brookline, and to the South in Milton.

The settlement of the Boston basin at first followed the valleys; the streams were used for navigation, and they supplied food and water. The early settlement of the Charles River valley accounts in part for the more intense development of the western portion of the metropolitan area today.

Thy physical setting of the metropolitan area has been the basis of the existing system of open spaces. The Metropolitan Park Plan of 1893 made a conscious effort to utilize the physical features of the area. The shoreline at Revere and Nantasket was reserved for beaches; the islands were kept in public ownership for future development; parkways followed streams and connected ponds. The hills to the North and South were set aside in large reservations which were to be kept in their natural state with a minimum of development. (The plan for a large reservation to the West never materialized.)

This close relation between open space and physical features should be preserved and developed further for a number of reasons:

1) Existing open space is located with respect to physical features;

2) unless open space has a strong basis in the physical setting it is continually jeopardized by development. A park on level land with no

special site characteristics is harder to preserve than one which is based on an attractive or unbuildable physical feature like a pond or a hilltop:

3) most important of all, the physical features form the natural structure of an open space plan. For example, a river is the way nature connects the hinterland to the ocean; it also acts as a break between developed areas. Hilltops have views; steep slopes or marshes are unsuitable for building. Thus, the simplest and most natural basis for open space in the future continues to be the physical setting of the metropolitan area.

b. Its relation to other land uses.

Open space may serve a local neighborhood, a larger community, or the metropolitan area as a whole, depending on its size, location, and development. As discussed here, open space must be large enough to be of significance beyond the local neighborhood.

In the past large chunks of open space existed on the hilltops between the valleys which contained the railroad lines and the more intense development. In the last ten or twenty years single-family residences have been built around most of the large open spaces in the metropolitan area, so that open spaces now are chunks in the middle of development. Formerly too, the lines of communication - highways, railroads - by-passed open spaces on its fringes; for example, US #1 and Breakheart Reservation and Lynn Woods; US #1 and the Arboretum and Jamaica Pond. Today, because open spaces are undeveloped, highways tend to be built right through them, e.g. Rt.128 and the Blue Hills Reservation; Rt. 93 and Middlesex Fells; the Southeast Expressway and the Neponset River.

Open spaces also separate industrial from residential areas. Mt. Auburn Cemetery separates industry in Watertown from residences in Cambridge; Prospect Park protects residential areas in Waltham from industry along Rt. 128.

The ideal relationship of open space to other land uses depends in each instance on its function and location in the region. Most uses of open space generate little noise or traffic and have relatively minor impact on the surroundings compared to other land uses. Thus, whereas open space may be a good neighbor to all kinds of activities, conversely not all kinds of activities make good neighbors to open space. For example, industry with smoke or sewer plants are not suitable adjacent to beaches. Highways are probably the main threat to open space. The tempo and noise of cars zooming by conflicts directly with the natural setting and the absence of man-made features which are the purpose of large reservations. Open areas which serve the metropolitan area and which will attract large crowds on special occasions should be accessible from regional highways rather than from local town roads, but these highways should pass on the fringe of the open area rather than through it. Open areas such as race tracks which attract larger crowds than roads or parking lots can accommodate should also be accessible by transit. In fact, at least one facility of each type of open space - from beaches to large reservations - should have transit access so that old people, teen-agers, poor people, clubs and classes and others who do not have use of a car can also reach recreation areas.

Heavy traffic generators like shopping areas are less desirable next to open space than work areas, since shopping takes place at the same time on Saturdays as open areas are used whereas work areas generally have little activity at that time.

Residential areas of low and high density are probably the best neighbors for most kinds of open space. Both are equally inocuous, and open space adds to the amenity of the residential area whereas open space contributes little to the desirability of shopping, working, or movement areas. When the open space is also a heavy traffic generator like a stadium, it is not compatible with residential areas, however.

c. The forms of open space

So far open space has been discussed as a whole. Actually it can take many different forms, each of which varies in its purpose, its impact on the surroundings, and its site size and location requirements.

The following chart roughly classifies some types of open space according to their service areas, access requirments and urban or non-urban character:

	Urban	Either	Non-urban
Local about 5 ac. 5,000-50,000 population local road access	-playgrounds -playfields -squares,plazas, small parks		
Community about 50 ac. 50,000-500,000 pop. major street access	-large parks -skating rink swimming pool -parkways -large parking areas	-race tracks -golf clubs -beaches, marinas -cemeteries -institutions -scenic areas -athletic facilities	
Regional about 500 acres 500,000 pop.or more regional highway access	-stadium -zoo -aquarium	-airports -botanical gardens	-reservations -beaches -marshes,flood plains -undeveloped open space -"farm-ways"

Urban open spaces differ from non-urban mainly in the intensity of use and development. Except for local parks and playgrounds which are reached by walking, the city's open spaces can usually be reached by transit or automobile. Furthermore, the central city is densely populated and accessible to people from the entire metropolitan area. Thus, it is appropriate that urban open areas are developed for use by many people. The transit access which distinguishes urban areas suggests also that urban recreation areas should be developed for use by older people, teenagers, clubs, and groups, and other special segment of the population. (The recreation center for exceptional children from the entire metropolitan area being constructed by the MDC in the city's Stonybrook Reservation is an example.)

It is apparant then that urban open spaces may be heavily used compared to non-urban open spaces. For this reason, open facilities in the central city are not necessarily good neighbors to residential areas. Depending upon the particular facility, it may be more suitable near commercial or institutional areas.

The forms of open space have changed in the last fifty years to correspond with changes in work and leisure habits and modes of transportation.

When the Metropolitan Park System was established at the end of the last century it was authorized to acquire and maintain "Open space for exercise and recreation". The cost was justified, it was thought, because there was no other way of providing the needed form of recreation than a public park system. The main forms of open space around 1900 were: playgrounds and local parks screened off from the surroundings by mounds, walls, and plantings; naturalistic parks for the "contemplative enjoyment of landscape compositions" and large reservations; and parkways to extend the zone of influence of the park into surrounding areas and to connect population centers with large parks.

By 1920 the parkways were already endangered by the increasing use of automobiles. Originally designed with curves and bends for horse carriages and strolling, they were unsuited to heavy use by cars;improving them as highways destroyed their function as parkways. In the 1920's and 1930's more provision was made for active recreation and spectator sports; playgrounds, tot-lots, golf courses, and stadia were developed.

In the future, new forms of open space will be needed. In the local neighborhood, passive open areas-small ornamental parks-for sitting will become important, in addition to playgrounds, as the proportion of older people in the population increases. On the community scale, marinas will be needed to serve the growing interest in boating. Also bicycle paths and walking paths

should replace the lost parkways. These paths should be from one to five miles long, in a strip of parkland about 400 feet wide, and if possible they should lead somewhere or follow a stream. On the regional scale there will be increasing need for large, undeveloped open areas to serve as breaks between the sprawling subdivisions. Ways of preserving private land in undeveloped form through easments or special tax arrangements or through donation to agencies like the Trustees of Reservations must be utilized fully. "Farm-ways" in which the land adjacent to the highways remains in agricultural use could then replace the lost parkways. Public reservations within a day's travel for active "working" recreation like camping or nature study by families or groups will also become of increasing importance.

3. How Much Open Space ?

The amount as well as the location of open space is significant if it is to fulfill the functions mentioned above.

Boston and its metropolitan area is fortunate in having had at the end of the last century leaders with the vision and the political ability to create an outstanding park system. The establishment of the Boston Park Commission in 1875 and the Mepropolitan Park Commission in 1893 created for the city and the metropolitan area the major open spaces for all time. It would be exorbitantly expensive today to create the public parks and reservations which exist for present-day and future enjoyment. Because only foresight can hold land undeveloped for future needs, land must be set aside today for the needs of the ultimate population of the metropolitan area.

a. Existing amount and distribution.

The existing open space in the metropolitan area has been classified into the following categories: 1) public parks and playgrounds; 2) public reservations and preserves; 3) clubs, golf courses and cemeteries; 4) vacant or rural land; and 5) water. Of these categories only the first two, the public parks and public reservations are relatively secure and can be counted upon in determining

future needs. Except for water and cemeteries, all the other open areas may be developed. The total amount of open area in all categories does provide some indication, however, of the possibility of still creating public reservations.

The amount of open space in the various parts of the metropolitan area may be evaluated in terms of acres per 1,000 population or as percent of total land area. The map "Distribution of Open Space", 1958 indicates that:

In terms of *acres/1,000 people*
- In *public* open space
  - The NW and S sectors are well served.
  - The Central (C), N, and W sectors are not as well served.
    - This is related to higher density development in these sectors.
  - The largest amounts of public open space are also where there are the fewest people, in the NW, SW, and S.
- In *total* open space
  - There are huge amounts in the S, SW, and NW, largely in rural and vacant land.
- (In developed area, the size of the red bar shows the density of development, i.e. a large red bar (NW) means many acres per 1,000 people or low density, and conversely a small red bar (C) means few acres per 1,000 people or high density. Except for the NW sector where density is very low (406 ac/1,000) the density in the remainder of the suburbs is fairly uniform. In the NE, W, and SE sectors it is slightly higher because these sectors contain old cities like Lynn and Quincy. Of course the city of Boston and the entire Central area is developed at much higher density (48 ac/1,000).

In terms of *per cent* of total area
- In *public* open space
  - There is a surprising uniformity in all parts of the metropolitan area. Indeed in some suburban sectors less of the total area is in public open space than in the densely developed Central sector. This may reflect the fact that as pressure for development mounts, only through public ownership is it possible to retain open space.
- In *total* open space
  - There are large amounts of undeveloped land in the S and SW. In fact, only the C and W sectors are more than 50% developed.

Leaving aside standards for the moment, the lack of open space in terms of the existing population is greatest in the Central and next in the NE sector. The potential for creating public open space is high in the S and SW where large amounts of rural or vacant land exist.

The following chart presents the distribution of existing open space by the sectors shown on the map.

	Acres per 1,000 population			Per cent of area		
	Open Space		Developed	Open Space		Developed
	Public	Total		Public	Total	
1. The city	4.7	9.2	31.9	11.5	22.4	77.5
2. Central	4.9	11.7	34.3	10.8	25.5	74.4
3. NE	14.2	107.8	66.3	8.1	61.9	38.0
4. N	21.3	147.2	104.0	8.5	58.6	41.3
5. NW	76.1	422.6	406.4	9.1	50.9	49.0
6. W	19.4	96.4	104.0	9.6	48.1	51.8
7. SW	35.2	351.3	165.1	6.8	68.0	32.0
8. S (Canton)	74.9	888.5	200.7	6.8	81.5	18.4
9. S (Randolph)	54.1	384.2	129.4	10.5	74.7	25.2
10. SE	31.8	144.8	113.7	12.3	56.0	43.9
All areas	11.6	79.3	48.3	9.6	62.1	37.8

That the Boston metropolitan area is fortunate in the amount of open space it has becomes apparant when other cities are compared. In five cities over 250,000 population, parks and playgrounds constitute an average of 4.3 acres per 1,000 population and 6.6% of the total area, compared to 4.7 acres and 11.5% in Boston.[11] Although variations may be due in part to differences in classifications, the existing open space and the proposed in relation expected population in three large cities is also not as ample as Boston's.

	Existing		Proposed[12]	
	Ac/1.000	Per cent	Ac/1,000	Per cent
Boston				
City	4.7	11.5		
Metropolitan area	11.6	9.0		
Montreal				
City	2.8	10.0	2.7	13.3
Detroit				
City	3.1	9.0	3.5	10.9
Metro study area	3.9	6.4	6.0	7.5
Toronto				
Metro	4.0		7.3	

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[11] Harland Bartholomey, Land Uses in American Cities, 1953 Table 3

[12] Detroit Metropolitan Area Traffic Study, Part II, p.19 (1957)
Montreal Master Plan: Open Space (1954)
The Official Plan of the Metropolitan Toronto Planning Area (1959)

In the case of Detroit and Toronto, these figures reflect rapid growth and the lack of far-sighted planning prior to development pressure. In a fast growing city like Toronto, high land costs prohibit public acquisition of open space to the amount that exists in older, more slowly developing cities.

Note that the Development Program, of the Metropolitan District Commission, 1956, p.77 shows a different and smaller amount of public recreation space for the Boston metropolitan area than the figures indicated above.

The acreage per 1,000 population indicated is as follows: (by sector)

C	3.8
N	17.6
W	6.3
SW	10.7
S	40.6
SE	9.2

All sectors 9.6 (4.2 city/town-owned;5.4 MDC)

Total acreage in MDC 20,436

City/town-owned	8,935
MDC owned (excldg.parkways)	11,501

8.4% of total area

There are 8.9 ac/1,000 future maximum (?)population

b. Amount needed in the future

The fact that the Boston area is relatively well provided with public open space today, does not ensure the future. It has already been shown that the demand for space in which to carry on leisure time activities is likely to grow as income and mobility increase and as the work week is shortened. One national expert estimates that public requirements for outdoor recreation experiences will increase tenfold by 2000;[13] and a study of Massachusetts recreation facilities indicates that the need for them will double by 1977, if "scenic saturation" is to be avoided.[14]

In addition to the growing demands of the existing population, there will be more people in the metropolitan area in the future. Since only long-range planning can protect open land from development, it is necessary now to protect open space for the "ultimate" population of the metropolitan area.

What is the ultimate population? And at what standard should open space be provided for it?

There are now 2,383,800 people in the sectors indicated on Map_____ In each of the next two decades roughly 150,000 more persons will live in this area, 315,000 more by 1980. If all of the vacant land in the area is "ultimately" developed at the average overall density of suburban development (160 acres/1,000 persons) 785,000 more persons will live in this metropolitan area, altogether an increase of 1.1 million over the existing population. The "ultimate"population of the area is then around 3,500,000. (Of course in reality there is no "ultimate" because redevelopment at higher densities can always occur. Nonetheless, it is likely that once all vacant land in the area is used up, growth will take place outside the area before extensive redevelopment at higher densities occurs within it.)

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[13] "How Important is Recreation Planning" in Urban Problems and Techniques, by Perry Norton.

[14] Report of...the Natural Resources of Massachusetts, Part II, Edwards, Kelcey and Beck, 1957.

The 1959,1980, and "ultimate" population of sectors within this area is shown on the following table.

Standards for open space have been developed for each type of facility. Standards must be varied somewhat according to the local conditions such as climate, vegetation (large open spaces in a dry, sandy district can lead to duststorms), the local economy(tourism could increase the need for open space), the existing pattern (if large open spaces constitute a major asset, there is no reason to reduce them to meet an abstract standard), and so forth. Nonetheless, nationally developed standards can act as a guidepost. In terms of acres per 1,000 population, they are as follows:

Playground	1.25	
Playfield	1.25	
Local Park	1.0	
	3. - 3.5	within walking distance
Large park	2.5 - 4.0	(40 ac.minimum size)
Reservations	5.0 -15.0	(250 ac.minimum size)

For an urban area as a whole this is roughly 10 to 20 acres per/1,000 persons. In recent years the 20 acre standard has been considered more appropriate. In addition, outside the urban area there should be large natural reservations and preserves (state or national parks, for example) for hunting, fishing, camping, nature study, etc.

Another way of expressing a standard for open recreation space is in terms of per cent to total land area. Ten per cent is considered desirable in an urban area.

Since it is not expected that reservations be provided within the city of Boston, there should be about 5.5 acres of local facilities and large parks for every 1,000 residents of the City. Does the City meet this standard in terms of existing and "ultimate" population?

There are roughly 3,170 acres of public recreation areas in the City now. In terms of the existing population of roughly 740,000, there is an overall

deficiency of 900 acres of open space. If the resident population of the City declines slightly in the future, to roughly 720,000, then there will still be a deficiency of 790 acres. Of course, some parts of the City are more deficient than others in open space. (The Recreation Systems Study will deal with deficiencies within the City.)

In the metropolitan area (Map___) the requirements for open space in terms of ultimate population are as follows: (This table needs to be reworked)

See Table p)

More than 10,000 acres of additional open space should now be set aside within the metropolitan area to meet the needs of the people who will live there in the future. If this space is not reserved in the next ten years or so, it will become increasingly difficult to maintain the high standard of public open space which the Boston metropolitan area enjoys today. Large amounts of public open space will be needed especially in the NE, N, SW, and S sectors of the region.

It is also important to take action for the acquisition of vacant land soon because some types of facilities require large contiguous areas. Bits and parcels of vacant land remaining after development has dispersed

Sector	Population			Public Open Space				
				Existing		Ultimate Reqd.		
	Est. 1959 [a]	1980 [b]	Ultimate [c]	Amount	Ac/1,000	Amount	Standard Ac/1,000	Additional Needed
1. (City)	737,000	728,000	720,000	3,500	4.7	3,960	5.5	790
2. C	1,384,100	1,385,000	1,400,000	6,925	4.9	7,700	5.5	770
3. NE	234,500	270,000	362,000	3,330	14.2	5,430	15.0	2,100
4. N	148,200	200,000	280,000	3,170	21.3	4,200	15.0	1,030
5. NW	52,500	90,000	245,000	4,000[d]	76.1	4,900	20.0	900
6. W	236,200	291,400	350,000	4,600	19.4	5,250	15.0	650
7. SW	58,200	85,000	180,000	2,050	35.2	3,600	20.0	1,550
8. S	34,500	72,500	202,000	2,600	74.9	4,040	20.0	1,440
9. S	26,200	38,000	83,000	1,420	54.1	1,660	20.0	240
10. SE	209,400	265,000	380,000	6,660	31.8	7,600	20.0	940
All	2,383,800	2,697,800	3,500,000	27,700	11.6	42,000	12.0	14,300

Notes:

Figures are rounded. Columns do not total.

a. GBESC b. GBESC plus BCPB modifications c. All vacant developed at 160 ac/1,000 population

d. Includes Bedford Airport, which should be excluded for the standards used here. There may be other types of public open space in the GBESC land use data which should be excluded.

itself over the land are not suitable for many of the functions of open space mentioned above. For example, a two acre vacant lot cannot serve as a break in the development pattern in a suburban area; nor can a 15 acre tract be turned into a golf course. The size appropriate for an open space to perform its function depends on many factors - the intensity of adjoining development; the amount of space needed for the recreation activity itself; the topography; and so forth. A quarter acre site may be enough to expose a beautiful view or to serve as a link with the past. A bicycle or hiking path may be 100 feet wide through a low density suburban area but adjacent to a highway, such a path needs a 300-400 foot width for protection. If an open space is to serve as a clear break in the development pattern it has to be about 5-10 acres in a densely developed area, but about 200 acres in a suburban area. To preserve the sense of nature-apart-from-man a reservation has to be about 500 acres.

For each purpose and for each location the required size of open area may vary. The significant point is that in addition to acreage requirements based upon the "ultimate" population, there are also acreage requirements based upon the purpose of the open space itself. In the suburbs large contiguous areas of undeveloped land are required both both the land use and the recreation functions of open space. Such areas must be preserved now for the needs of the future population.

4. The Plan For Open Space

a. Guiding assumptions and principles

- Open space is naturally related to physical features - water and hills.

  Water can be used for recreation
  Water cannot be built upon
  Steep hills are difficult to build on

- Open hill tops can be seen in the valleys.

    They lend an air of openness to the surroundings
    They provide a view

  There may be a conflict between active recreation space (playfields) and topography.
    Solution: very low density, institutional, or park use on hilltops ; playfields part of community fabric.

- Valleys are natural development areas.

    Development started in valleys.
    Transportation lines lie in valleys.

- River valleys, however, also have value as open space. Amenity.

    Flood plains in river valleys provide an opportunity for open use.

  There is a conflict between open development in river valleys and development, especially for transportation purposes.
  Solution: use the banks and about 400 feet on either or both sides for parkland. Transportation lines should be buffered from and outside this strip.

- Utilize existing open space, especially large areas.

    It is very difficult to create new large recreation areas.

  (Other factors, such as the relation to other land uses, discussed above should also be taken into account in the plan for any particular open space.)

b. The role of open space in Boston

The City of Boston is centrally located in the metropolitan area; it is the focal point for transportation by rail, transit, and automobile; and it is almost entirely built up at a high density.

For these reasons, besides the open spaces which are integral parts of residential areas, the open spaces in Boston are likely to be intensely used compared to outlying open spaces. Since many are accessible by transit, they should be developed especially for transit-dependent elements in the population - teenagers, older people, classes, clubs - and for facilities which attract large crowds - stadia, festivals, exhibitions. Also, since downtown Boston is a tourist at-

traction, open spaces in the City should be developed with tourists in mind; that is, whenever possible they should capitalize upon a historical site, an attractive view, or a significant architectural or cultural building.

Parks, both small local ones like Blackstone Square and larger ones like Franklin Park, should be maintained for passive recreation in the City. Large areas for passive recreation, however, must be located outside the City because of economic pressures.

Within the City, as in the metropolitan area as a whole, the main open spaces should follow natural features - rivers and hills. Valleys are also natural channels for transportation routes. Park land can occupy the banks for roughly 500 feet on either side, however, without interfering with rail or highway lines. These valley parks are good location for walking and bicycle paths. Originally parkways were intended for horses and pedestrians; today heavy automobile traffic prohibits their use for walking, riding, or bicycling. Walking or bicycle routes leading to population concentrations or recreation facilities should be separated from cars and surrounded by open space on either side. The banks of a stream or creek are good locations for these routes.

Hilltops in Boston should be left open or kept in low density residential or institutional development to preserve a feeling of openness in the valleys. The ridge of hills in Roxbury and Dorchester is already dotted with parks and playgrounds. This open character should be preserved and promoted in the plan to accentuate the break between the transportation and industrial uses in the lowland and valleys and the residential use on the plateau.

c. The general plan

In general the plan for open space within Rt. 128 uses physical features to create substantial breaks in the development pattern. Major open spaces are located within these "breaks".

Rivers:

- Neponset to Stonybrook Res.
- Charles
- Mystic to Middlesex Fells
- Saugus
- Muddy Creek to Arboretum to cemeteries to Charles River

Ponds

- Fresh Pond - Alewife Brook - Mystic Lakes

Beaches

- Wollaston - Treasure Island - Long Island - Squantum
- Malibu - Columbia Park - South Boston
- Fort Point Channel - waterfront
- East Boston
- Revere
- Nahant

Hills - reservations

- Blue Hills
- Stonybrook
- Chestnut Hill - Brookline
- Waltham institutions
- Middlesex
- Arlington - Winchester to Route 128
- Lynn Woods - Breakheart Res.
- Islands

Within Boston: (in addition to existing)
- Strip parks along river valleys and shoreline - Charles, Neponset, Muddy Creek, Dorchester shoreline to South Boston.
- Open hill ridge through Dorchester
- Fort Point Channel and waterfront
- Islands

d. Agencies concerned with open space in the Boston area, their specific proposals, and their potential role in preserving open space.

The Metropolitan District Commission

Established in 1893 as the Metropolitan Parks Commission, the MDC is the main holder and developer of open space and recreation facilities in the metropolitan area. Within its boundaries (corresponding roughly to Rt. 128), it owns more than half of all the land in public parks and reservations.

The Development Program prepared by Edwards, Kelcey, and Beck for the MDC in 1956 suggested the acquisition of "several thousand acres" of land in reservations to meet the needs of the future population of the area. Specific proposals included:

> Land within Middlesex Fells not now owned by MDC
> Land on the northern boundary of the Blue Hills Reservation
> A new reservation near Great Pond in the Braintree-Weymouth are a Cat Rock Hill southwest of the Cambridge Reservoir
> The Canton-Norwood marshes
> "Buffer strips" in 1) the Beaver Brook valley in Lexington, Belmont, Waltham; and 2) from the Arlington Water Works to Horn Pond in Woburn.

The actual acquisitions of large tracts by the MDC since 1956 consist of: 1) Lovell and George's islands (150 acres), being developed as a marina for private pleasure craft; and 2) the Needham-Dedham water works along the Charles River (600 acres).

The MDC has concentrated almost exclusively in recent years on the development of recreation facilities in land areas already owned by them. Specific proposals within the City of Boston mentioned in the Development Program are:

- Ice rinks:
    - North End - Cotilla Park. Constructed.
    - Stonybrook. Constructed.
    - South Boston. Under construction.
    - Franklin Park. Proposal.
- Freshwater bathing pools:
    - Franklin Park. Proposal.
    - Brighton - Chestnut Hill. Definite plans.
- Salt-water beaches.
    - Carson Beach, South Boston, Expansion.
- Pleasure boating - marinas.
    - Dorchester Bay.
    - Downtown.

  All proposals for marinas have been dropped for the time being since private interests seem to be providing adequate service; and the MDC does not want to compete with private interest.
- Other facilities:
    - Harbor islands, Lovell and George's islands acquired and being developed.
    - Zoo. Acquired.
    - Aquarium. The MDC Report recommended that a joint university-civic committee be established to sponsor the zoo and aquarium both of which are highly specialized facilities requiring more than custodial care for successful operation.

In addition to carrying out proposals mentioned in the Development Program the MDC has also initiated other new projects, for example, the recreation center for exceptional (crippled) children to be constructed in the Stonybrook Reservation.

The heavy emphasis of the development of facilities has been encouraged by the legislature which has appropriated to the MDC $5 million annually for the last several years for this purpose. The maintenance of facilities and the acquisition of new land has been neglected, however. This imbalance should be corrected. From the point of view of the residents of the city acquisition of new large areas of open space within the MDC district should receive high priority, because the remaining large open areas will soon be fragmented by private developments. (The MDC should also be enabled to acquire land outside its boundaries for the use of residents of the metropolitan area.. This power is currently being investigated by the legal staff of the MDC with regard to a proposed golf course outside the park district.)

Several other points should be mentioned. First, the relation of MDC facilities to parks owned by the cities and towns is unclear. It is the stated policy of the MDC to acquire and operate only those facilities which serve more than one community. It has happened, however, that the MDC has provided facilities in areas already well served by local facilities, resulting in a duplication of services. Close coordination in the development and planning of recreation space should exist between the City's Planning and Park Departments and the MDC. (i.e. show them our General Plan.) The City must recognize also that when a facility is turned over to the MDC local control over the future development of the facility is lost. Its development for regional use by the MDC may be to the detriment of the local area, (for example, regional traffic to Carson Beach through residential streets of South Boston.)

The extensive construction of buildings, parking lots, shelters, etc. on park land destroys the open character of the park. This danger exists especially in parks in the City because they are relatively small and cannot envelope man-

made features without losing their green and open character as well as a large reservation can. Man-made structures should be kept at a minimum in all parks, and whenever possible they should be sited unobtrusively away from the edge of the open area so that the beneficial effect of green and open space upon the surroundings remains. (For example, crowding Franklin Park with a zoo, a stadium, an ice skating rink, a swimming pool, etc. will spoil the naturalistic, open effect.)

The disposal of any park land by either the MDC or the City should be carefully watched and should be made very difficult. Once open land is developed it is almost impossible to reclaim it for open recreation use. Any loss of park land to a higher authority (state or federal) should be compensated financially, and the funds should be expended on the acquisition of new park land in roughly the same area. (The State will take 21 acres of the Fenway for the Inner Belt; Money received for this should be used for new open space in the Fenway area and not in Roxbury, for example, where new park land is badly needed and where it should be financed independently of the Fenway loss.)

Finally, in order to preserve parkways for pleasure driving, the MDC should have zoning control of a strip of land roughly 400 feet in depth on either side of the parkway. At present, the individual cities and towns have access and zoning control adjacent to MDC parkways with the result that some of them have been developed for uses - industrial, commercial, - which spoil the parkway nature of the road.

The Park Department of the City of Boston

This department has not been contacted in the course of this study. (Contact should be established when the park-recreation systems study for the City is underway.) Probably the main concern of the department is the maintenance of existing facilities rather than planning or programs.

The acreage of publicly controlled open space in the City has not been determined exactly. The figures vary as follows:

Public parks, playground, and playfields (GBESC, 1958)		3,494
Park & recreation areas (Municipal Res. Bur., 1955)		3,171
7 community parks	1,509	
2 reservations	561	
school yards	171	
local parks & playgrounds	930	
Total	3,171	
Public recreation lands, municipal, school, and MDC		2,560
(MDC Development Program, 1956) plus Arnold Arboretum - 167 ac.		2,727
"The City's Parks" (The Boston Globe 1960)		2,657

The existing parks of 25 acres or more, and thus of more than local significance, within the City are:

The Back Bay Fens (City) (21 ac. will be taken for the Inner Belt)
McConnell Park. (City) Dorchester.
Neponset River (M.D.C.) Dorchester.
Franklin Field (City) Dorchester.
Dorchester Park (City) Dorchester.
Olmstead Park (City) Jamaica Plain.
Charles River (M.D.C.) Brighton.
Arnold Arboretum (Private) Jamaica Plain.
Franklin Park (City) Roslindale.
The Common and the Public Garden. (City). Downtown.

Trustees of the Reservation

This corporation has been set up to acquire or hold "beautiful and historical tracts of land within the Commonwealth". They own 4445 acres of open space of which roughly 3,300 acres are within 30 to 40 miles of Boston (the Bay Circuit). The properties range in size from ½ ac. to 1300 acres. The Trustees are not considering acquisition of any sites near Boston at present. They are mainly interested in sites with unusual natural or historic attributes, not in open space per se or in recreation areas.

The Bay Circuit

In 1956 the Legislature authorized the establishment of "a system of privately and publicly owned open spaces, parks, forests, reservoirs, wild life reserves, scenic and historic sites, and other reservations surrounding the Boston metropolitan area" roughly 20 to 30 miles from the center of the City. A marked tourist route winds through the "Bay Circuit".

The primary responsibility for carrying out the Bay Circuit concept lies with the Department of Natural Resources; no funds have been authorized by the Legislature, however, for the acquisition of open space in the Bay Circuit. (As in the case of the MDC, the Legislature has authorized a small amount of funds to the Department of Natural Resources for the development of recreation facilities on existing state parks; but the authorizations for maintenance and for acquisition of new land has been minimal.) Within the area designated as the Bay Circuit many open spaces already exist. Potentially this legislation is one of the best tools of preserving open space in the region. It should be utilized soon before the basic idea of a "greenbelt" between Route 128 and the proposed Route 495 is violated by extensive development.

The National Historic Sites Commission

The local office of this Commission will issue a report on its recommendations in the summer of 1960. The specific proposals to be included are:

The Minute Man National Park - roughly an 800 ft. strip, 4 miles long, along Rt. 2A in Lexington and Concord (575 ac.) and an area of 155 ac. around the North Bridge in Concord.

The Shirley House in Roxbury - High priority. Would like renewal area extended to include this historic building which would be set in a two ac. open site.

Charlestown Historic Park - Long-range plan. An 8 ac. site along Bunker Hill Av. and Polk St., to mark the Battle of the Fence.

Faneuil Hall, Union Oyster House Block - The Hall could be taken over by the Park Service as an individual historic building; the block might be an "historic district" to preserve the street pattern in it. These proposals could be coordinated with the Government Center project. Otherwise they would have low priority.

The Commission is interested only in sites with national historic significance, not in parks as such. Their role in preserving open space is therefor minor.

Conclusion

Open space is fragile. It is violated and changed more easily than any other kind of land use. When open space is closely related to physical features, however, it has a reason for being which contributes to its viability in the face of economic development pressures.

Sometimes open space is looked upon as a residual land use in the negative sense of not being built upon. In reality, the desirability of the City and the metropolitan area both for economic activity and for living will depend in the long-run on the quality and the quantity of the open spaces. Their permanence through time will make the kind of environment in which rebuilding of outworn areas becomes worthwhile. Far from being a left-over, open space is then the essential and constant element around which development can change.

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